

Deborah A. Agarwal

Senior Scientist and Head, Data Science and Technology Department

Lawrence Berkeley National Laboratory

DAAgarwal@lbl.gov

<http://crd.lbl.gov/about/staff/data-science-and-technology/deborah-a-agarwal/>

Professional Preparation

University of California, Santa Barbara	Computer Engineering	PhD 1994
University of California, Santa Barbara	Computer Engineering	M.S. 1991
Purdue University	Mechanical Engineering	B.S. 1985

Appointments

2010 –	Senior Scientist, Data Science and Technology, Lawrence Berkeley National Lab
2005 –	Department Head, Data Science and Technology, Lawrence Berkeley National Lab
2015 – 2020	International Chair, Myriads Team, Inria – Bretagne Atlantic, France
2014 –	Senior Fellow – Berkeley Institute for Data Science, University of California
2014 - 2017	Steering Committee Member - Computing Research Association – Women
2012 –	Board Member - Computing Research Association – Widening Participation
1994 - 2010	Staff Scientist, Advanced Computing for Science, Lawrence Berkeley National Lab
2005 - 2009	Researcher, Berkeley Water Center, University of California, Berkeley
1985-1988	Project Engineer, Advanced Engineering Staff, General Motors Technical Center

Recent Career Highlights

Doctorate Honoris Causa, University of Rennes I, France: Awarded honorary doctorate for contributions in computing for science. Awarded: June 2020.

Deputy Task Area Lead for Modeling and Simulation for the National Alliance for Water Innovation (NAWI): NAWI is a \$100 million dollar hub whose goal is to advance a portfolio of novel technologies that will secure a circular water economy in which 90% of nontraditional water sources – such as seawater, brackish water, and produced waters – can be cost-competitive with existing water sources within 10 years.

Principal Investigator for the ESS-DIVE Data Repository: Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE) is a new data archive for Department of Energy Earth and Environmental Science data. Development of the archive has been a major undertaking.

Computing Research Association Committee on Widening Participation (CRA-WP) Board Member: CRA-WP board is working to increase the representation of women and under-represented minorities at all levels of Computer Science research. Dr. Agarwal is a co-lead of the Early and Mid Career Mentoring Workshops, which bring together around 150 mid and early career women in computer science for two days to meet with senior women in the field and receive mentoring advice and learn valuable skills. Dr. Agarwal has throughout her career worked to support women in science.

International Chair, Inria – Bretagne Atlantique: The International Chair position is a sabbatical at Inria for one year over a period of five years. The Inria Myriads team that hosts the sabbatical is led by Christine Morin and focuses on cloud computing and energy efficient computing research topics. Term: 2015 – 2020.

Awards and Honors

1. Doctorate Honoris Causa (Honorary Doctorate), University of Rennes I, France – 2020
2. IEEE Senior Member – 2018
3. R&D 100 award for Carbon Capture Simulation Initiative Toolset – 2016
4. Berkeley Lab Director's Award for Exceptional Achievement in Diversity 2015
5. Senior Fellow of the Berkeley Institute for Data Science - 2014 – ongoing
6. Berkeley Lab Women @ The Lab – 2013 inaugural class
7. R&D 100 award for Rage remote teleconferencing robot – 2002
8. Named one of the Top 25 Women of the Web by Upside Magazine - 2000

Selected Recent Research and Development Activities

1. **National Alliance for Water Innovation (NAWI) Deputy Task Area Lead for Modeling and Simulation** – helping lead identification and development of key water treatment modeling and simulation capabilities to innovate the water treatment space through modern multi-scale modeling techniques. Project period: 2020 – ongoing.
2. **Environmental Systems Science – Data Infrastructure for a Virtual Ecosystem (ESS-DIVE) Principal Investigator** – mission to preserve, expand access to, and improve usability of critical data generated through Department of Energy (DOE) - research of terrestrial and subsurface ecosystems. ESS-DIVE is designed to be a long-term data repository. It incorporates innovative new ways of working with the community, serving up the data, and managing the data. We are also working with the community to develop, as needed, standards for data in the environmental space. Project period: 2017 – ongoing.
3. **AmeriFlux Network Management Project Data Management Team Lead** – developing data management and data processing system for ~500 carbon flux measurement sites in the Americas. The data management system provides an integrated quality check and data processing dataset to carbon cycle studies through a scientist-centric web portal supporting over 6600 users. Project period: 2012 – ongoing.
4. **Enabling Water-Energy Decision Support Using Watershed-scale Surrogate Models Project Co-Lead** – the goal of this project is to evaluate surrogate deterministic and probabilistic models including neural network, radial basis function, and polynomials to see which type of surrogate models best approximate the different components of the water balance. Project period: 2018 – 2020.

5. **Next Generation Ecosystem Experiments Tropics (NGEETropics) Data Management Component Lead** – working with modelers to provide the data products from tropical research work needed to develop new models and reduce uncertainty in models. The project is working to improve the understanding of the dynamics of tropical biomes and reduce the uncertainty in climate models over the tropics. We are partnering with field scientists to develop needed data standards and data products. Project period: 2015 - ongoing
6. **FLUXNET Data Management** – working in collaboration with the global carbon flux networks to develop and serve a gap-filled and partitioned global carbon flux dataset. We have helped produce and hosted the global FLUXNET carbon flux dataset since 2007. We support over 6600 users studying carbon flux to utilize this data. Project period: 2007 – ongoing.
7. **Watershed Function Scientific Focus Area Data Management and Assimilation Component co-lead** – developing a data federation and brokering service that integrates genomic, hydrologic, geophysics, contaminant tracking, model, and experiment data into a single system enabling scientists to develop an understanding of the impact of climate change on watershed scale systems. Project period: 2013 - ongoing
8. **Carbon Capture Simulation Initiative Integration Team and IDAES Project Crosscutting Team Lead** – building the components needed to integrate across the broad range of tools, models, and experiments needed to design and study carbon capture solutions for power plants. These components are bringing together simulations, reduced models, uncertainty estimation, and optimization into a single integrated environment intended to accelerate the deployment of carbon capture. Project period: 2010 – ongoing.
9. **International Soil Carbon Network** – as part of a Microsoft eScience project, developed the International Soil Carbon Network reporting protocol, QA/QC software, and data management system. Project period: 2008 – 2019.
10. **Principal Investigator for the Deduce data science research project:** Deduce (Distributed Dynamic Data Analytics Infrastructure for Collaborative Environments) focuses on three areas: 1) Detecting and measuring the impact of data change - the algorithms needed to quantify changes in distributed data and the impact of those changes on data analyses and products; 2) Distributed data semantics - the user, metadata, and provenance information to support dynamic data integration; and 3) Dynamic data lifecycle management - the mechanisms required to identify, store, and track changes in distributed data resources. Project period: 2016 – 2019.

Publications

Selected recent publications:

1. Mueller, J., Park, J., Sahu, R., Varadharajan, C., Arora, B., Faybishenko, B., and **Agarwal, D.** (2019). *Surrogate Optimization of Deep Neural Networks for Groundwater Predictions*. arXiv preprint arXiv:1908.10947. Retrieved from <https://arxiv.org/pdf/1908.10947>
2. Guyon, D., Orgerie, A. C., Morin, C., and **Agarwal, D.** (2019). Involving users in energy conservation: a case study in scientific clouds. In *International Journal of Grid and Utility Computing* Vol. 10 (pp. 272). Inderscience Publishers. doi:[10.1504/ijguc.2019.099667](https://doi.org/10.1504/ijguc.2019.099667)
3. Varadharajan, C., **Agarwal, D. A.**, Brown, W., Burrus, M., Carroll, R. W. H., Christianson, D. S., et al. (2019). Challenges in Building an End-to-End System for Acquisition, Management, and Integration of Diverse Data from Sensor Networks in Watersheds: Lessons From a Mountainous Community Observatory in East River, Colorado. *IEEE Access*, 7, 182796-182813. doi:[10.1109/access.2019.2957793](https://doi.org/10.1109/access.2019.2957793)
4. **Agarwal, D.**, Varadharajan, C., Cholia, S., Snavely, C., Hendrix, V., O'Brien, F., et. al. (2018). Environmental System Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE): Report on our First 18 Months. AGU Fall Meeting.
5. Hubbard, S. S., Williams, K. H., **Agarwal, D.**, Banfield, J., Beller, H., Bouskill, N., et. al. (2018). The East River, Colorado, Watershed: A Mountainous Community Testbed for Improving Predictive Understanding of Multiscale Hydrological-Biogeochemical Dynamics. *Vadose Zone Journal*, 17(1), 180061. doi:[10.2136/vzj2018.03.0061](https://doi.org/10.2136/vzj2018.03.0061)
6. Faybishenko B., Molz F., Agarwal D. (2018) Nonlinear Dynamics Simulations of Microbial Ecological Processes: Model, Diagnostic Parameters of Deterministic Chaos, and Sensitivity Analysis. In: Silvestrov S., Malyarenko A., Rančić M. (eds) *Stochastic Processes and Applications*. SPAS 2017. Springer Proceedings in Mathematics & Statistics, vol 271. Springer, Cham. doi:[10.1007/978-3-030-02825-1_19](https://doi.org/10.1007/978-3-030-02825-1_19)
7. Devarshi Ghoshal, Lavanya Ramakrishnan, and **Deborah Agarwal**. 2018. Dac-Man: data change management for scientific datasets on HPC systems. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC '18)*. IEEE Press, Piscataway, NJ, USA, Article 72, 13 pages.
8. Miller, D. C., Siirola, J. D., **Agarwal, D.**, Burgard, A. P., Lee, A., Eslick, J. C., . . . Gunter, D. (2018). Next Generation Multi-Scale Process Systems Engineering Framework. In *13th International Symposium on Process Systems Engineering (PSE 2018)* (pp. 2209-2214). Elsevier. doi:[10.1016/b978-0-444-64241-7.50363-3](https://doi.org/10.1016/b978-0-444-64241-7.50363-3)
9. Metzger, S. , **Agarwal, D.** , Biraud, S. , Desai, A. R. , Durden, D. , Hartmann, J. , Li, J. , Luo, H. , Papale, D. , Pastorello, G. , Pingingtha-Durden, N. , Sachs, T. , Serafimovic, A. , Sturtevant, C. , Torn, M. and Xu, K. , Li-cor Biosciences, 4647 Superior Street, Lincoln, NE 68504, USA (2017): Catalyzing continental-scale carbon cycle science with NEON's first data and software release , 2017 Joint NACP and Ameriflux

Principal Investigators Meeting, Bethesda North Marriott Hotel & Conference Center
North Bethesda, MD, 27 March 2017 - 30 March 2017 .

10. Pastorello, Gilberto, Dan Gunter, Housen Chu, Danielle Christianson, Carlo Trotta, Eleonora Canfora, Boris Faybishenko et al. "Hunting Data Rogues at Scale: Data Quality Control for Observational Data in Research Infrastructures." In *2017 IEEE 13th International Conference on e-Science (e-Science)*, pp. 446-447. IEEE, 2017.
11. Faybishenko, Boris, Fred Molz, and **Deborah Agarwal**. "Nonlinear Dynamics Simulations of Microbial Ecological Processes: Model, Diagnostic Parameters of Deterministic Chaos, and Sensitivity Analysis." In *International Conference on Stochastic Processes and Algebraic Structures*, pp. 437-465. Springer, Cham, 2017.
12. Danielle S. Christianson, Charuleka Varadharajan, Bradley Christoffersen, Matteo Detto, Boris Faybishenko, Bruno O. Gimenez, Val Hendrix, Kolby J. Jardine, Robinson Negron-Juarez, Gilberto Z. Pastorello, Thomas L. Powell, Megha Sandesh, Jeffrey M. Warren, Brett T. Wolfe, Jeffrey Q. Chambers, Lara M. Kueppers, Nathan G. McDowell, **Deborah A. Agarwal**, A metadata reporting framework (FRAMES) for synthesis of ecohydrological observations, In *Ecological Informatics*, Volume 42, 2017, Pages 148-158, ISSN 1574-9541, <https://doi.org/10.1016/j.ecoinf.2017.06.002>.
13. Ramakrishnan, Lavanya, Daniel Gunter, Gilberto Z. Pastorello, Valerie Hendrix, James Fox, Gonzalo P Rodrigo Alvarez, Gary Kushner, Ryan Rodriguez, and **Deborah A. Agarwal**. 2017. "Template Interfaces for Agile Parallel Data-Intensive Science". United States. <http://www.osti.gov/scitech/servlets/purl/1353431>.
14. Pastorello, G. Z., D. Papale, H. Chu, C. Trotta, **D. A. Agarwal**, E. Canfora, D. D. Baldocchi, and M. S. Torn (2017), A new data set to keep a sharper eye on land-air exchanges, *Eos*, 98, <https://doi.org/10.1029/2017EO071597>. Published on 17 April 2017.
15. **Agarwal, D. A.**, Faybishenko, B., Freedman, V. L., Krishnan, H., Kushner, G., Lansing, C., Porter, E., Romosan, A., Shoshani, A., Wainwright, H., Weidmer, A., and Wu, K. (2016) A science data gateway for environmental management. *Concurrency Computat.: Pract. Exper.*, 28: 1994–2004. doi: [10.1002/cpe.3697](https://doi.org/10.1002/cpe.3697).
16. Luke Nave, Kris Johnson, Catharine van Ingen, **Deb Agarwal**, Marty Humphrey, Norm Beekwilder. International Soil Carbon (ISCN) Database v3-1. 2016. DOI: 10.17040/ISCN/1305039.
17. Gilberto Pastorello, **Deb Agarwal**, Dario Papale, Taghrid Samak, Carlo Trotta, Alessio Ribeca, Cristina Poindexter, Boris Faybishenko, Dan Gunter, Rachel Hollowgrass and Eleonora Canfora. "Observational data patterns for time series data quality assessment", The 10th IEEE International Conference on e-Science, Guarujá, SP, Brazil (Oct 20 – 24, 2014)
18. Lavanya Ramakrishnan, Sarah Poon, Valerie Hendrix, Daniel Gunter, Gilberto Pastorello and **Deborah Agarwal**. "Experiences with User-Centered Design for the Tigres Workflow API", The 10th IEEE International Conference on e-Science, Guarujá, SP, Brazil (Oct 20 – 24, 2014)

19. David C. Miller, Madhava Syamlal, David Mebane, Curt Storlie, Debangsu Bhattacharyya, Nikolaos V. Sahinidis, **Deb Agarwal**, Charles Tong, Stephen E. Zitney, Avik Sarkar, Xin Sun, Sankaran Sundaresan, Emily Ryan, Dave Engel, and Crystal Dale, "Carbon Capture Simulation Initiative: A Case Study in Multiscale Modeling and New Challenges," *Annual Review of Chemical and Biomolecular Engineering*, Vol. 5: (Volume publication date July 2014)
20. Valerie Hendrix, Lavanya Ramakrishnan, Youngryel Ryu, Catharine van Ingen, Keith R. Jackson, **Deborah Agarwal**, "CAMP: Community Access MODIS Pipeline," *Future Generation Computer Systems*, October 2013, ISSN 0167-739X, <http://dx.doi.org/10.1016/j.future.2013.09.023>.
21. **Deb Agarwal**, Arthur Wiedmer, Boris Faybisenko, Tad Whiteside, James Hunt, Gary Kushner, Alex Romosan, and Shoshani Arie. "A methodology for management of heterogeneous site characterization and modeling data." *XIX International Conference on Water Resources (CMWR)*, Urbana-Champaign, IL, June 2012.
22. Dario Papale, **Deborah Agarwal**, Dennis Baldocchi, Robert Cook, Joshua B. Fisher, and Catharine van Ingen. Database maintenance, data sharing policy, collaboration. In Marc Aubinet, Timo Vesala, and Dario Papale, editors, *Eddy Covariance*, pages 399–424. Springer, 2012.
23. **D. Agarwal**, Y.W. Cheah, D. Fay, J. Fay, D. Guo, T. Hey, M. Humphrey, K. Jackson, J. Li, C. Poulain, Y. Ryu, and C. van Ingen, Data-intensive science: The Terapixel and MODIS Azure projects, *International Journal of High Performance Computing Applications August 2011 25: 304-316*, doi:10.1177/1094342011414746
24. **D. Agarwal**, M. Humphrey, N. Beekwilder, K. Jackson, M. Goode, and C. van Ingen, "A Data-Centered Collaboration Portal to Support Global Carbon-Flux Analysis," *Concurrency and Computation: Practice and Experience*, Wiley & Sons, Volume 22, Issue 17, pages 2323–2334, 10 December 2010.
25. Lavanya Ramakrishnan, Chin Guok, Keith Jackson, Ezra Kissel, D. Martin Swamy, **Deborah Agarwal**, "On-demand Overlay Networks for Large Scientific Data Transfers," May 2010, CCGRID '10: Proceedings of the 2010 10th IEEE/ACM International Conference on Cluster, Cloud and Grid Computing.
26. M. Humphrey, **D. Agarwal**, and C. van Ingen. Fluxdata.org: Publication and Curation of Shared Scientific Climate and Earth Sciences Data. In Proceedings of the 5th IEEE international Conference on e-Science (e-science 2009). Dec 7-9, 2009. Oxford, UK.
27. "The Alaska Soil Carbon Database: A Powerful Database for Soil Carbon Synthesis and Modeling," K. D. Johnson, **D. Agarwal**, J. W. Harden, D. McGuire, C. Swanston, C. van Ingen, *Eos Trans. American Geophysical Union, Fall Meet. Suppl.*, B51F-0368, San Francisco, CA (Dec 2009).
28. "Process-based estimates of terrestrial CO₂ assimilation and evapotranspiration using MODIS at continental scale: a bottom-up approach," Youngryel Ryu, Dennis Baldocchi, Jie Li, Keith Jackson, Catherine van Ingen, **Deb Agarwal**, *Eos Trans.*

American Geophysical Union, Fall Meet. Suppl., B51B-0308, San Francisco, CA (Dec 2009).

29. "Experiences Developing a Collaborative Data Sharing Portal for FLUXNET," **Deb Agarwal**, Marty Humphrey, Norm Beekwilder, Catharine van Ingen, Dario Papale, Markus Reichstein, and Dennis Baldocchi, Eos Trans. American Geophysical Union, Fall Meet. Suppl., IN31B-1007, San Francisco, CA (Dec 2009).

Other selected publications:

1. Schuchardt KL, **Agarwal DA**, Finsterle SA et al (2012) Akuna integrated toolsets supporting advanced subsurface flow and transport simulations for environmental management. In: Proceeding of International Conference on Computational Methods in Water Resources (CMWR 2012), pp. 59–63.
2. Matt Bishop, Justin Cummins, Sean Peisert, Anhad Singh, Bhume Bhumiratana, **Deborah Agarwal**, Deborah Frincke, Michael Hogarth, "Relationships and data sanitization: a study in scarlet," NSPW '10: Proceedings of the 2010 workshop on New security paradigms, September 2010.
3. J. Li, **D. Agarwal**, M. Humphrey, C. van Ingen, K. Jackson, and Y. Ryu. "eScience in the Cloud: A MODIS Satellite Data Reprojection and Reduction Pipeline in the Windows Azure Platform." Proceedings of the 24th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2010), Apr 19-23, 2010. Atlanta, Georgia.
4. "A Cloud Computing Service for Remote Sensing Data Reprojection and Science Reduction," Jie Li, Youngryel Ryu, Keith Jackson, **Deb Agarwal**, Marty Humphrey, Catharine van Ingen, Eos Trans. American Geophysical Union, Fall Meet. Suppl., H51H-0857, San Francisco, CA (Dec 2009).
5. J. Hunt, **D. Agarwal**, and C. van Ingen, "Synthesis of Hydrologic Data Reveals Rainfall-Runoff Relationships and Examines Watershed-Scale Changes," Computational Methods in Water Resources, San Francisco, CA, 2008.
6. W. T. C. Kramer, A. Shoshani, **D. A. Agarwal**, B. R. Draney, G. Jin, G. F. Butler, and J. A. Hules, "Deep Scientific Computing Requires Deep Data," IBM Research and Development, 48(2), 2004. LBNL-55724
7. K. Berket, **D. A. Agarwal**, O. Chevassut, "A Practical Approach to the InterGroup Protocols," Future Generation Computer Systems, volume 18, number 5 (April 2002), pp. 709-719.
8. O. Chevassut, **D.A. Agarwal**, M.R. Thompson and G. Tsudik, "An Integrated Solution for Secure Group Communication in Wide-Area Networks", Proceedings of the 6th IEEE Symposium on Computers and Communications, 3-5 July, 2001, Hammamet, Tunisia.
9. **D. A. Agarwal**, P. M. Melliar-Smith, L. E. Moser, and R. Budhia, "The Totem Multiple-Ring Ordering and Topology Maintenance Protocol," Transactions on Computer Systems, vol. 16, no. 2 (May 1998).

10. L. E. Moser, P. M. Melliar-Smith, **D. A. Agarwal**, R. K. Budhia, and C. A. Lingley-Papadopoulos, "Totem: A Fault-Tolerant Multicast Group Communication System," Communications of the ACM, April 1996.
11. **D. A. Agarwal**, L. E. Moser, Y. Amir and P. M. Melliar-Smith, "Extended Virtual Synchrony," Proceedings of the 14th IEEE International Conference on Distributed Computing Systems, Poznan, Poland (June 1994), 56-65.
12. **D. Agarwal** and S. Floyd, "A tool for debugging Internet multicast routing," Proceedings of the 22nd ACM Computer Science Conference, Phoenix, AZ (March 1994), 22-29.

Invited Speaker

1. University of California Berkeley - Women in Data Science –2020
2. DOE Data for AI meeting – Rockville, MD - 2019
3. Brazil Flux Networks Workshop – Menaus, Brazil - 2019
4. Grace Hopper (Women in Computing) Conference – 2016 – 2019
5. Inria Women in Computing - Rennes, France – 2018
6. IBM Distinguished Lecture – Almaden, CA - 2018
7. ICOS Science Meeting – Prague, CZ – 2018
8. Ukrainian Ministry of Science – 2018
9. NSF Geoscience Digital Data Resource and Repository Service (GeoDaRRS) Workshop – Boulder, CO - 2018
10. Natural Science and Math Colloquium at Saint Mary's College Maryland - 2017,
11. International SuperComputing Women in HPC, Frankfurt, Germany - 2017
12. Cal State University East Bay – Hayward, CA - 2016 & 2017
13. Plato Royalty Lecture Series Speaker at Evergreen State College - 2016
14. Distinguished Lecture at TriWic Conference – 2016
15. IEEE Women in Engineering Conference – 2016
16. IN2P3 Strategy Meeting - 2015,
17. Inria Lyon Seminar 2015,
18. Inria Journe Scientific 2015,
19. Benicia High School – invited - 2015
20. N2Women Workshop, - Keynote - 2014 & Panelist - 2020
21. Inria@SiliconValley 2014,
22. Women at National Labs Panel 2013
23. Keynote Graduation Speaker - California Polytechnic, San Louis Obispo Computer Science Graduation, 1997.

Service to Research Community

1. National Academy of Sciences – Data Education Roundtable – Member – 2018 - 2019
2. AGU Earth and Space Sciences Informatics – Fellow Committee – 2019

3. Federation of Earth Science Information Partners (ESIP) – member – 2019 – ongoing
4. UKRI STFC Scientific Computing Division Review Panel – Harwell, UK - 2019
5. NIST Research Data Frameworks Meeting – invited - Gaithersburg, MD – 2019
6. DOE Data for AI meeting – invited – Rockville, MD - 2019
7. Cary Institute – Ecological Data Workshop – invited – Millbrook, NY – 2019
8. Multi-Sector Dynamics – MSD-LIVE Planning Workshop – invited – Gaithersburg, MD – 2019
9. DOE Tri-Lab Research Agenda meeting – invited – Pittsburgh, PA - 2019
10. PASC conference program committee 2019
11. Brazil Flux Networks Workshop – Manaus, Brazil - 2019
12. IEEE eScience conference program committee 2017 - 2019
13. ICOS Science Meeting – Prague, CZ – 2018
14. Ukraine Ministry of Science – Kiev, Ukraine – 2018
15. NSF Geoscience Digital Data Resource and Repository Service (GeoDaRRS) Workshop – Boulder, CO - 2018
16. University of California, SLASAC Digital Libraries Committee – 2018 – ongoing
17. University of California, Environmental Research Accelerator – 2018 – ongoing
18. Invited speaker: Distinguished Lectures in Data Science – Berkeley Institute for Data Science, UC Berkeley 2018
19. Networking and Information Technology Research and Development (NITRD) Big Data Workshop - Bethesda, MD – invited - 2018
20. AGU Earth and Space Sciences Informatics – Poster reviewer
21. LLNL Computing Area reviews, 2015, 2016, 2017
22. ESA Data Management Tutorial - ~2016
23. Keynote speaker at Inria Journees Scientific 2016
24. Colorado School of Mines EECS Department Committee of Visitors 2014
25. Berkeley Lab lab-wide and division staffing committees – 2012 - 2014
26. LIGO Project Computing review 2014
27. Grace Hopper Conference - Data Science Track Co-Chair 2015 and Data Science Committee member 2016.
28. CMS/Atlas program US computing reviews –
29. CMWR 2008 Ecoinformatics Session Chair
30. Guest Editor - Special Issue on Group Communication in Ad hoc Networks with the International Journal on Wireless and Mobile Computing
31. Tech Women mentor and leadership seminar – 2011 – 2012
32. Comprehensive Test Ban Treaty, Vienna, Austria - Cost-Free Expert on multicast communication 1997 – 2001

Diversity Service Activities

1. Chair of the LBNL CS Area Mentoring Committee. Implementing mentoring, recruitment, and awareness activities in support of under-represented groups in computing. Dr. Agarwal formed the committee and has run the program 2009 - 2019.
2. Organizing Committee for the Berkeley Lab Computing Area Career Mentoring Program for Early Career – 2018 & 2019 and Mid-Career – 2020.
3. N2Women Workshop, - Keynote - 2014 & Panelist – 2020.
4. Board Member of the Computing Research Association Committee on Widening Participation (CRA-WP) since 2012.
5. Steering Committee Member of the Computing Research Association Committee on the Status of Women (CRA-W) 2014 - 2017.
6. International SuperComputing Women in HPC, Frankfurt, Germany - 2017
7. Co-Chair of the CRA-W Mid-Career Mentoring Workshops (Mid-CMW) and Early-Career Mentoring Workshops (Early-CMW). Speaker at CRA-W Grad Cohort since 2014. Speaker in the Grace Hopper Conference CRA-W Career Mentoring Workshops since 2014.
8. Distinguished Lecture at TriWic Conference – 2016
9. IEEE Women in Engineering Conference – 2016
10. Grace Hopper Conference - Data Science Track Co-Chair 2015 and Data Science Committee member 2016.
11. Grace Hopper Conference - LGBT Community Co-Lead 2010 - 2016.